

Message

From: Woo, Cynthia [cynthia.woo@aptim.com]
Sent: 8/23/2021 8:31:17 PM
To: Schulman, Michael [Schulman.Michael@epa.gov]
Subject: FW: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Hi Michael,

Please see David's response below. If you have any further questions, please let us know.

Thanks, Cynthia

CYNTHIA WOO
Project Manager

APTIM | Federal Services

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E cynthia.woo@aptim.com



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From: Cacciatore, David <David.Cacciatore@aptim.com>
Sent: Monday, August 23, 2021 11:48 AM
To: Woo, Cynthia <cynthia.woo@aptim.com>
Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

I was not able to find an email correspondence re. vinyl chloride.

I did find a comment in the review of TRW 2018 Annual GWR May 2020 Draft re. VC. In response to a comment in Section 3.9.2.1, Page 15, "EPA agrees that TCE, cDCE, and Freon 113 are migrating onsite from an offsite up hydraulic source to impact the central portion of the TRW Site in both the A and B1 zones. However, vinyl chloride is elevated (above regulatory level) in the central portion of the TRW Site in both of these zones that is not migrating from offsite. The vinyl chloride and possible residual TCE and daughter product beneath the TRW Site should be addressed in the Focused Feasibility Study discussed in Section 5.0."

I would comment the same that VC is a daughter product of the TCE biodegradation. The accumulation should be brief, proceeding to ethene/ethane. If VC is persisting, then suggest checking the DHC population along with substrate, nutrients, DO, and ORP to make sure that there is not a limitation present.

From: Woo, Cynthia <cynthia.woo@aptim.com>
Sent: Monday, August 23, 2021 8:36 AM
To: Cacciatore, David <David.Cacciatore@aptim.com>
Subject: FW: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Hi David,

Can you forward me the e-mail that Michael is referring to?

I will look also but it may have been communication between you and Michael. Thank you!

Cynthia

From: Schulman, Michael <Schulman.Michael@epa.gov>

Sent: Monday, August 23, 2021 8:18 AM

To: Woo, Cynthia <cynthia.woo@aptim.com>

Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

EXTERNAL SENDER

Hi Cynthia,

I'm looking for what I think is an email where David Cacciatore gave a potential reason why vinyl chloride concentrations were increasing in the ISB treatment area as a TCE daughter product. Does this sound familiar and you have an email for this you can forward me. I did an Outlook search and didn't find an email: from:APTIM.com "vinyl chloride" Cacciatore. I think his comment would have been related to the Signetics sites and high VC in GW, perhaps as it relates to potential VI.

If you don't have an email, it might be easier to just ask him again. I believe his comments had to do with the ISB EVO amendment mix and/or dosing concentrations, maybe? Or geochemistry (pH, DO, ORP?) or buffering capacity? Off memory, the microbe DC population is sufficient.

Thank you,
Michael

From: Woo, Cynthia <cynthia.woo@aptim.com>

Sent: Friday, June 5, 2020 9:38 AM

To: Schulman, Michael <Schulman.Michael@epa.gov>

Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Hi Michael,

Please review the attached. I reviewed this and it also went through our technical editor. Once you approve, I can PDF the documents for delivery to Locus today.

Question: I wasn't sure if you wanted Locus' response to comments within 14 days or their responses *plus* the final WP. I recommend requesting both since your next step would be EPA approval unless you feel you need to see their responses prior to finalization.

Thanks, Cynthia

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From: Schulman, Michael <Schulman.Michael@epa.gov>

Sent: Thursday, June 4, 2020 10:17 AM

To: Woo, Cynthia <cynthia.woo@aptim.com>

Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

EXTERNAL SENDER

Hi Cynthia,

Can you finalize the Phase EAB Treatability Work Plan RTCs, attached:

- Technical review. If there is anything you are unsure of, ask David to review.
- Editorial review
- Delete the green checkboxes (they are just useful to keep track of what's already been reviewed).
- Draft a Cover letter with table as an attachment. Can we send this out tomorrow?

Thank you,
Michael

From: Woo, Cynthia <cynthia.woo@aptim.com>

Sent: Friday, May 22, 2020 4:51 PM

To: Schulman, Michael <Schulman.Michael@epa.gov>

Cc: Cacciatore, David <david.cacciatore@aptim.com>

Subject: FW: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Hi Michael,

Please review David's response below (and the attachments provided) to your highlighted question.

Let us know if you have any questions or concerns.

Best, Cynthia

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There are a couple of references consulted regarding the overburden pressure recommendation. The first source, Battelle, 2013, *Best Practices for Injection and Distribution of Amendments*, Technical Report TR-NAVFAC-EXWC-EV-1303, March, pp. 43-44 and Table 4.10 [Inject-amend-tr-navfac-exwc-ev-1303.pdf], was the one provided to Locus in our RTCs to their Work Plan, Enhanced Anaerobic Bioremediation Phase II Treatability Study. The other sources reviewed were those referenced in the Battelle document, including:

- In-Situ Remediation Reagents Injection Working Group (ISRRIWG). 2009. Technical Report: Subsurface Injection of In Situ Remedial Reagents (ISRRs) within the Los Angeles Regional Water Quality Control Board Jurisdiction. September [Subsurface_injection_of_ISRR.pdf]

- Payne, F.C., Quinnan, J.A., and Potter, S.T., 2008, Remediation Hydraulics, Florida, CRC, Press; Taylor & Francis Group LLC, 408 p.; only Ch. 13 attached from this text [Pages from epdf.pub_remediation-hydraulics.pdf]

Regarding the reference to "... overburden pressure is expected to be roughly 10% of the pressures reported" we were trying to state that the overburden pressures provided in Locus' response are much higher than those we have estimated. Without knowing all of the details behind the pressure reported in their response, or the details behind the calculations provided in Appendix D, we estimate an overburden pressure less than 30 psi. In fact if we assume an injection depth of 30 ft bgs, and a saturated depth of 24 feet, we estimate the overburden pressure to be 15 psi. Our comment goes further to state that we understand that elevated injection pressures have been demonstrated in the field and at this site, but we believe Locus should understand that even at 100 psi, they are greatly exceeding the overburden pressure and should do so cautiously.



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From: Schulman, Michael <Schulman.Michael@epa.gov>

Sent: Friday, May 22, 2020 10:28 AM

To: Woo, Cynthia <cynthia.woo@aptim.com>

Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

EXTERNAL SENDER

Hi Cynthia,

Can you draft the attached EPA responses/comments on the Phase II EAB WP. I'd like the comments/RTCs transferred to a table for clarity. Note, that the highlighted sections in attached are the ones I'm going to email Locus today to see if I can get answered (or clarify) outside of the RTCs.

For the APTIM comment highlighted below, can you send me the file that was used to calculate the overburden recommendation? Also clarify what is meant by "... overburden pressure is expected to be roughly 10% of the pressures reported".

EPA Response: EPA concurs with the response and notes that Appendix D, Study Area Overburden Pressure Calculations, was included in the Work Plan revised March 2020. A sample calculation should be provided with Appendix D to demonstrate the elevated pressures results reported. Based upon the 30 feet bgs depth and permeable lithology, the overburden pressure is expected to be roughly 10% of the pressures reported, or 30 to 50 psi. Interbedded fine grain lenses can be expected to double the required injection pressure to infiltrate the soil column, bringing the total pressure up to 100 psi. Injection pressures above 100 psi have a reasonable probability of fracturing the subsurface. It is understood that pressures above 100 psi were utilized in the Phase I pilot test with limited fracturing based on noticed substrate daylighting.

Thank you!
Michael

From: Woo, Cynthia <cynthia.woo@aptim.com>
Sent: Thursday, May 14, 2020 8:26 AM
To: Schulman, Michael <Schulman.Michael@epa.gov>
Cc: Cacciatore, David <david.cacciatore@aptim.com>
Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Hi Michael,

Attached are David's revisions to responses to Locus' comments on the Signetics EAB Phase II WP. I kept everything in tracked changes, so this is a very rough draft version. Please review and then once finalized, let me know if you would like me to prepare a formal Concurrence Letter on behalf of EPA to close the loop.

If you have any questions, please let us know.

Thanks, Cynthia

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From: Schulman, Michael <Schulman.Michael@epa.gov>
Sent: Wednesday, May 13, 2020 8:23 AM
To: Woo, Cynthia <cynthia.woo@aptim.com>
Cc: Cacciatore, David <David.Cacciatore@aptim.com>
Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

EXTERNAL SENDER

Hi Cynthia,

I'm following up on the APTIM review status for the Phase II EAB Treatability Work Plan (EAB WP). I also want to check that APTIM's review will check that the RTCs on the EAB Performance Evaluation Report and Addendum, attached, are addressed in the EAB WP. Based on my review of Locus' attached RTCs, the EAB WP addressed EPA's comments; however, I highlighted with PDF comments the Locus responses that I'd like APTIM to focus on.

Thank you,
Michael
415-972-3064

From: Woo, Cynthia <cynthia.woo@aptim.com>
Sent: Thursday, May 7, 2020 7:58 AM
To: Schulman, Michael <Schulman.Michael@epa.gov>

Cc: Cacciatore, David <david.cacciatore@aptim.com>

Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Hi Michael,

I touched base with David yesterday and he was able to begin reviewing this yesterday.

Thanks, Cynthia

CYNTHIA WOO

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From: Schulman, Michael <Schulman.Michael@epa.gov>

Sent: Wednesday, May 6, 2020 6:15 PM

To: Woo, Cynthia <cynthia.woo@aptim.com>

Cc: Cacciatore, David <David.Cacciatore@aptim.com>

Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

EXTERNAL SENDER

Hi Cynthia,

I'm following up on APTIM's review status below.

Additionally, I was looking through the draft comments I previously sent you in my email below and I made some revisions, attached, to clarify some comments. I also added highlights to the Word document and bookmarks to the attached redline PDF WP to help me navigate between the two.

Thank you,

Michael

628-629-2421 (m)

From: Schulman, Michael

Sent: Wednesday, April 22, 2020 12:36 PM

To: 'Woo, Cynthia' <cynthia.woo@aptim.com>

Cc: Cacciatore, David <david.cacciatore@aptim.com>

Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Thanks! When you've finish, can you also let me know how many hours your review took.

Thanks again,

Michael

From: Woo, Cynthia <cynthia.woo@aptim.com>

Sent: Wednesday, April 22, 2020 12:26 PM

To: Schulman, Michael <Schulman.Michael@epa.gov>; Condit, Rose <rose.conda@aptim.com>

Cc: Cacciatore, David <david.cacciatore@aptim.com>

Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Hi Michael,

Yes, will do. I will check in with David and get back to you on our timeframe for completion.

Thanks, Cynthia

CYNTHIA WOO

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From: Schulman, Michael <Schulman.Michael@epa.gov>

Sent: Wednesday, April 22, 2020 12:20 PM

To: Woo, Cynthia <cynthia.woo@aptim.com>; Condit, Rose <rose.conda@aptim.com>

Cc: Cacciatore, David <David.Cacciatore@aptim.com>

Subject: FW: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

EXTERNAL SENDER

Hi Cynthia,

Please have APTIM review the Locus' comments on the Phase II Treatability Study Work Plan that were attached to Wes' email below. My draft response to Locus is attached. Please have APTIM add their review comments as tracked changes.

A few points for reference:

- My responses highlighted in yellow mean that I plan on circling back to confirm my response. APTIM should review these responses in more detail.
- I've emailed Locus yesterday to get a copy of their March 2020 QAPP?
- The groundwater monitoring sampling methodology (e.g. low flow) that will be used is unclear to me from the Work Plan. My disjointed draft response reflects that. Can you make sense of what the GWM sampling methodology will per the Work Plan?
- Also review the revised work plan redline strike outs.

Let me know when APTIM will finish conducted the review.

Thank you,

Michael

From: J. Wesley Hawthorne <hawthornej@locustec.com>

Sent: Thursday, March 19, 2020 2:09 PM

To: Schulman, Michael <Schulman.Michael@epa.gov>

Cc: Woo, Cynthia <cynthia.woo@aptim.com>; Africa Espina <guzuna@locustec.com>; Barker, Shau-Luen (<ShauLuen.Barker@philips.com>) <ShauLuen.Barker@philips.com>

Subject: RE: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Michael:

We have updated this work plan in response to EPA comments. Attached are three files:

- An updated full copy of the updated work plan
- A redlined copy of the text and tables so you can see what has changed from the previous submittal
- A letter describing how each of the comments were addressed

Please let me know if you have any questions.

J. Wesley Hawthorne, PE, PG

President

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From: Schulman, Michael <Schulman.Michael@epa.gov>

Sent: Tuesday, February 18, 2020 5:51 PM

To: Barker, Shau-Luen (<ShauLuen.Barker@philips.com>) <ShauLuen.Barker@philips.com>; J. Wesley Hawthorne (<hawthornej@locustec.com>)

Cc: 'Woo, Cynthia' <cynthia.woo@aptim.com>

Subject: Signetics: EPA Comments on Phase II Treatability Study Work Plan, CERCLIS Site ID CAD070466479

Hi Shau-Luen and Wes,

Please find attached EPA's comments on the subject work plan. Please prepare a response letter that includes your intention to comply with EPA's comments within 30 days. If Philips or Locus would like to have a meeting to go over the comments before finalizing the Work Plan, please feel free to call or email me to schedule a meeting date.

Thank you,

Michael Schulman

Remedial Project Manager / Superfund Division

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